Mississippi National River and Recreation Area

# Aquatic Bugs & Their Feeding Habits

**Materials** - for a group of 8 students:
Copies of aquatic insects handout (key) for students
2 staple removers
1 small suction cup
2 tweezers
2 tea strainers
1 straw
Large plastic tub filled with 4-6 gallons of water (sample wetland)
Chopped up Jell-O
Small pieces of sponges (submerged & floating)
Small rocks
Bread or Cookie pieces (to be soaked in water)
Twigs

**Procedure:**
1. Fill the tub with water and small pieces of gelatin (Jell-O), scatter the small pieces of sponge, cookie or bread pieces, rocks and twigs throughout the tub. Hand out the mouth parts (staple remover, suction cups, etc.) and have the students discover which food their "mouth" will catch. After 30 seconds (or so) have the students switch "mouths." Discuss which mouths caught what food. How did the students decide which food their mouths would catch? Did some mouths catch more food? Why?

2. Hand out the aquatic insect sheet and try to determine what each insect eats by examining its mouthparts. How are the insect mouths similar to the tools the students used in the activity? Ask the students to match up the identified insects to the "mouthparts" they used earlier. Can they tell which animal feeds on what? How can they tell?

Based on the above information determine the aquatic food chain. There are aquatic insects that: graze on vegetation, are filter feeders (filter the water for food), eat other animals, are parasitic, and are decomposers.

Background:
Aquatic insects have job specific mouths and mouthparts. Just as a bird's beak is specialized, so are the mouths of aquatic insects. The various "tools" the students used are symbolic of aquatic mouthparts: leeches have suction mouths (for sucking the body fluids of their prey), snails have scraping mouths (for scraping the algae off of rocks, etc.), dragonfly larvae have large chewing mouthparts covered by a scoop like lip (feeding on insects larvae, worms, etc.), and flies have piercing (sucking mouthparts). Aquatic insects can be identified by their mouthparts, along with other characteristics (such as number of wings, number of legs or tail appendages). Aquatic insects are related to terrestrial (land) insects in many ways. Some go through metamorphic stages similar to terrestrial insects. Just as a butterfly starts as a caterpillar, the dragonfly starts much the same way - except that the dragonfly can live up to three years in its larval (or nymph) phase before it finally turns into an adult dragonfly.

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